



Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Compressors/Engines ☐
Dehydrators ☐
Pipelines ☒
Pneumatics/Controls ☐
Tanks ☐
Valves ☐
Wells ☐
Other ☐

Inspect Flowlines Annually

Applicable sector(s):

☒ Production ☐ Processing ☐ Transmission and Distribution

Partners reporting this PRO: Texaco

Other related PROs: Clock Spring® Repair, Begin DI&M at Remote Facilities, Use Ultrasound to Identify Leaks, Use of Improved Protective Coating At Pipeline Canal Crossings

Technology/Practice Overview

Description

All gas wells have flowlines that transport natural gas to transmission compressor stations or processing plant booster stations. These flowlines are normally buried and can leak methane as a result of internal corrosion (particularly in wet, sour gas service), external corrosion and abrasion from thermal cycling. Methane leakage from flowlines is one of the largest sources of emissions in the gas industry.

One partner has instituted a program of annual flowline inspection to reduce gas losses. Underground leaks may be discovered using ultrasound detectors, digital radiography, or through the temporary introduction of an odorant into the gas stream. Regular repair of underground leaks will prevent small leaks from increasing in volume over time.

Principal Benefits

Reducing methane emissions was:

☒ The primary benefit of the project ☐ An associated benefit of the project

Operating Requirements

Walking inspections are more effective when using enhanced leak detection devices or odorants.

Applicability

This applies to all flowlines in the production sector.

Methane Savings

58 M cf/yr

Costs

Capital Costs (including installation)

☒ <\$1,000 ☐ \$1,000-\$10,000 ☐ >\$10,000

Operating and Maintenance Costs
(Annual)

☐ <\$100 ☐ \$100-\$1,000 ☒ >\$1,000

Payback (Years)

☐ 0-1 ☐ 1-3 ☐ 3-10 ☒ >10

Methane Emission Reductions

The methane emission reductions are based on eliminating the average amount of methane emissions from production underground pipelines, as derived from the EPA/GRI study "Methane Emissions from the Natural Gas Industry, Vol. 2:" 53.2 scfd/mile. One partner has reported natural gas emission reductions of 68 Mcf/yr.

Economic Analysis

Basis for Costs and Savings

The savings of 58 Mcf/yr are based on finding and repairing leaks (with the industry average leakage rate) in 3 miles of underground pipeline

Discussion

The capital cost assumes the purchase of an ultrasound detector for approximately \$250. Operating costs include the labor needed to walk the pipelines with the detectors and the labor and materials needed to repair the pipelines. The labor cost for one month per year of inspection is about \$5000. According to Oil and Gas Journal, October 9, 1995 Edition, the costs per repair using a type B steel sleeve is about \$680 (in 2001 dollars), including labor.